

Appln. Serial No. 10/708,220
Amendment Dated December 8, 2006
Reply to Office Action Mailed October 12, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1 1. (Cancelled)

1 2. (Currently Amended) ~~The apparatus of claim 1,~~ An apparatus comprising:
2 one or more housing sections providing a sealed space;
3 a first explosive element in the sealed space;
4 a cable;

5 a component to provide a signal over the cable to the first explosive element to
6 detonate the first explosive element;

7 a second explosive element having a first portion inside the sealed space, and a
8 second portion outside the sealed space exposed to outside pressure, the first explosive element
9 to initiate the second explosive element without presence of a pressure barrier between the first
10 and second explosive elements; and

11 a gripping mechanism to grip a surface of the second explosive element to
12 maintain a position of the second explosive element that is exposed to the outside pressure in an
13 axial direction of the second explosive element.

14 wherein an inner surface of a first one of the one or more housing sections is
15 contacted to the second explosive element to provide sealing engagement between the first
16 housing section and the second explosive element.

1 3. (Original) The apparatus of claim 2, wherein the first housing section comprises a
2 boot formed of an elastic material, the boot contacted to the second explosive element.

1 4. (Original) The apparatus of claim 3, wherein the elastic material comprises an
2 elastomer.

1 5. (Original) The apparatus of claim 3, wherein the one or more housing sections
2 further comprise a hard housing section to house the first explosive element.

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1 6. (Original) The apparatus of claim 5, wherein the first explosive element in the
2 hard housing section comprises a detonator explosive.

1 7. (Original) The apparatus of claim 6, wherein the second explosive element
2 comprises a detonating cord.

1 8. (Original) The apparatus of claim 7, further comprising a booster explosive
2 provided in the sealed space and ballistically connected between the detonator explosive and the
3 detonating cord.

1 9. (Original) The apparatus of claim 3, wherein the gripping mechanism comprises
2 a grip tube having an inner space through which the second explosive element extends, the grip
3 tube having a roughened inner surface to grip an outer surface of the second explosive element.

1 10. (Original) The apparatus of claim 9, wherein the gripping mechanism further
2 comprises a crimping shell to grip the second explosive element.

1 11. (Original) The apparatus of claim 10, wherein the crimping shell is adapted to
2 anchor the second explosive element at a first pressure, and the grip tube is adapted to anchor the
3 second explosive element at a second pressure, the second pressure greater than the first
4 pressure.

1 12. (Original) The apparatus of claim 11, wherein the grip tube is adapted to collapse
2 at greater than a predetermined pressure, wherein collapse of the grip tube causes the grip tube to
3 grip the second explosive element.

1 13. (Original) The apparatus of claim 10, wherein the boot comprises an inner
2 chamber in which the grip tube and crimping shell are located.

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1 14. (Previously Presented) The apparatus of claim 10, wherein the boot comprises an
2 inner chamber in which the grip tube and crimping shell are located.

1 15. (Currently Amended) The apparatus of claim [[1]] 2, further comprising a well
2 tool adapted to be activated by detonation of the first and second explosive elements.

1 16. (Currently Amended) The apparatus of claim [[1]] 2, further comprising a
2 perforating gun to be activated by detonation of the first and second explosive elements.

1 17 - 30. (Cancelled)

1 31. (Currently Amended) ~~The apparatus of claim 1, further comprising~~ An apparatus
2 comprising:

3 one or more housing sections providing a sealed space;

4 a first explosive element in the sealed space;

5 a cable;

6 a component to provide a signal over the cable to the first explosive element to
7 detonate the first explosive element;

8 a second explosive element having a first portion inside the sealed space, and a
9 second portion outside the sealed space exposed to outside pressure, the first explosive element
10 to initiate the second explosive element without presence of a pressure barrier between the first
11 and second explosive elements;

12 a gripping mechanism to grip a surface of the second explosive element to
13 maintain a position of the second explosive element that is exposed to the outside pressure in an
14 axial direction of the second explosive element; and

15 a third explosive element between the first and second explosive elements,
16 wherein the third explosive element is contacted to the first explosive element, and the third
17 explosive element is contacted to the second explosive element.

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1 32. (Currently Amended) The apparatus of claim ~~[[1]]~~ 31, wherein the component
2 comprises an electronic module.

1 33. (Previously Presented) The apparatus of claim 32 wherein the electrical module
2 is responsive to input signals provided over an input cable.

1 34. (Currently Amended) The apparatus of claim ~~[[1]]~~ 31, wherein the cable
2 comprises an electrical cable.

1 35. (Previously Presented) The apparatus of claim 31, wherein the first explosive
2 element comprises a detonator, the second explosive element comprises a detonating cord, and
3 third explosive element comprises a booster explosive between the detonator and the detonating
4 cord, the booster explosive contacted to the detonator and contacted to the detonating cord.

1 36. (Currently Amended) An apparatus comprising:
2 one or more housing sections providing a sealed space;
3 a detonator in the sealed space;
4 a booster explosive contacted to the detonator in the sealed space;
5 a detonating cord contacted to the booster explosive, wherein a first portion of the
6 detonating cord is in the sealed space, and a second portion of the detonating cord is outside the
7 sealed space for exposure to ~~[[the]]~~ outside pressure,
8 wherein an inner surface of one of the one or more housing sections is contacted
9 to the detonating cord to provide sealing engagement between the one housing section and the
10 detonating cord; and
11 a gripping mechanism to grip a surface of the detonating cord to maintain a
12 position of the detonating cord in the axial direction of the detonating cord.

1 37. (Previously Presented) The apparatus of claim 36, wherein the booster explosive
2 is contacted to the detonator without presence of a barrier between the booster explosive and the
3 detonator.